

Colorado Department of Health  
Hazardous Materials & Waste Management Division

Comments

on

DRAFT

TECHNICAL MEMORANDUM 1

ROCKY FLATS PLANT

700 AREA

Operable Unit NO. 8

APRIL, 1994

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General Comments:

1) The cover of this document must include a reference to the Final, Phase I, RFI/RI Work Plan to which this TM is appended.

2) The Division was informed during OU-8 RFI/RI Work Plan scoping meetings that foundation drains might play a significant role in the transport and fate of contaminants. Certainly, the sampling of drain outfalls is an important task. However, the Division gained the impression in the scoping sessions that preferential pathways within the backfill, not merely the discharges from the drains, would direct more precisely the locations of boreholes or other sampling techniques to characterize the level of contamination. (For example, metals may have been mobilized for a period of time along the path of the drains but be indicated to a lesser degree, or non-detectable, in drain effluent.)

Additionally, Section 6.4.1.1 of the OU-8 Phase I RFI/RI Work Plan states that "... a site walk of the facilities and buildings in OU-8 will be conducted in an attempt to locate and determine the extent of the drains and determine optimum sampling locations." The Division construes this statement to include sampling of drain effluent and a determination of locations within an IHSS where sub-surface soil sampling can be performed to the extent warranted by the nature of the release.

DOE must clearly state in the document the dual role to be served by this technical memorandum. To the extent the investigators can, at this time, aid the selection of borehole locations to be proposed in TM-2 they should do so in this document so that any insights into logical locations will not be lost.

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3) The focus of this TM has been lost. In Section 4.4, Sampling Recommendations, Buildings not IHSSs are the focus of the recommendations. This is an OU-8 TM; therefore, the focus should be on sampling recommendations that will support characterization of the IHSSs and nature and extent of contamination from the IHSSs. The role of the foundation drains, if any, in respect to each OU-8 IHSS should be clearly presented and discussed. This should include rationales to sample, or not sample, footing drain effluent based upon the nature of the release, the type and mobility of the contaminants of concern, and whether specific footing drains present opportune pathways for contaminant migration. This would also be a logical place to discuss potential borehole sites as suggested in General Comment #2.

4) A review of Figures 5 through 20 indicate either foundation or storms drains lay within the boundaries of some OU-8 IHSSs. DOE should review the OU-8 RFI/RI Work Plan and determine if the paths these drains follow represent potential preferential pathways for contaminant dispersion and determine if soil borings are applicable adjacent to the drains.

#### **Specific Comments:**

**Figure 10:** Figure 10 incorrectly identifies IHSS 150.4 as IHSS 118.1. Per Figure 2-3 of the OU-8 Work Plan IHSS 118.1 is located adjacent to Building 701. Figure 11 of the TM also shows IHSS 118.1 adjacent to Building 701. Please correct Figure 10.

**Figure 11:** The northern portion of IHSS 150.7 is not shown on a figure. Figure 12 is the logical choice to include all portions of the IHSS. For consistency with the other Figures, IHSS 118.2 should also be shown on Figure 12.

**IHSS 123.1:** IHSS 123.1 is not depicted on a figure; however, if there is potential influence from the storm drainage system it should be shown. IHSS 123.1 is associated with a valve vault and ditch.

#### **SECTION 4.4:**

DOE should provide complete rationales for the inclusion or exclusion of potential sample stations addressed in Section 4.4. The headings should be relative to OU-8 IHSSs more so than the Buildings. It is the OU-8 investigation, not UBC or D&D.

#### **Building 111:**

(See Section 4, page 93 of 100) Information presented in Table 2, the first and second paragraphs of Section 3 (page 3 of 46), and Section 4.3.1 is noteworthy. Samples were collected previously from the outfall, as depicted in Figure 23 and 24 as recently as March, 1992. However, when the outfall was not located later that

year sampling ceased. Figures 23 and 24 indicate slight radionuclide and more abundant metals contamination as recently as 1992. Although not an OU-8 issue, DOE should be concerned about contamination around its administration building considering the apparent lack of manufacturing or processing within the building. DOE should follow-up on the possible outfall location reported by Jacobs or the possibility that the drain discharges to the manhole west of Building 115 and, if located and flowing, collect a sample for analysis. Whether routine sample is resumed would depend on sample results. Therefore, the recommendation to stop sampling BS-111-2, Section 4 (page 93 of 100) may be appropriate, but complete elimination of sampling at Building 111 may be unacceptable. Please investigate and respond to the Division.

**Building 371/374:**

The monitoring and sampling recommendation for this Building is an example of how the focus has shifted to buildings versus OU-8 IHSSs. IHSS 188 is the site of a possible nitric and hydrochloric acid leak which may have contained heavy metals. The recommendation is made that sampling of FD-371-2 should continue if flow is observed and that a sediment sample should be collected for the OU-8 investigation. A foundation drain passes through the area occupied by the IHSS; however, is the pipe slotted beneath the IHSS? (In reviewing Figure 2-26 of the OU-8 Work Plan, the small buildings located within the IHSS appear to be temporary structures that may post-date construction of the drain, or would not have required drains.) Unless the pipe is slot or breached, this sample station would provide more information on Under Building Contamination (UBC) than on IHSS 188. Please examine available drawings to determine if the drain is slotted after it leaves the building. This is not a suggestion to drop the sampling, merely to recognize that it may, or may not, be of value to the characterization of the IHSS.

Additionally, to the extent an acid spill may have carried and mobilized heavy metals, the potential for preferential pathways along the route of the drainage pipe is of interest and may help target boring locations in TM-2.

**Building 444/447/460:**

Reference should be made to Figure 9. The figure apparently does not depict the proposed location for FD-447-1; therefore, how can this recommendation be followed if exercised at a future date? There are no OU-8 IHSSs in the immediate area; will DOE be spending OU-8 dollars on this proposed sampling effort?

**Building 559:**

(No impact upon OU-8 IHSSs.)

**Building 707:**

Reference Figure 10. (No Impact upon OU-8 IHSSs.)

**Building 771:**

It appears that adding a sampling station at Manhole #3 will result in more information on Building 771 than it will the contamination in OU-8 IHSSs 150.1, 150.2 or 172. However, since sampling is proposed at Manhole #3, and may be of value in characterizing UBC, why is no station proposed at Outfall 2 located to the west of Building 771.

**Building 774:**

The rationale for sampling FD-774-1 is unclear in respect to investigation of OU-8 IHSSs. Although FD-774-2 has been dry during sampling events, sampling the sediment at FD-774-2 relative to IHSS 150.3 is appropriate. (The footing drain at the southwest edge of Building 774, Figure 11, is in potential contact with any leakage from process waste lines in the B771-774 tunnel.)

**Building 779:**

Reference Figure 13. The recommendation is to drop FD-779-1 from the sampling program since it is a storm drain. However, the storm drain actually passes beneath the southern portion of IHSS 138. According to the OU-8 Work Plan, the reported spill at this portion of the IHSS was 400 gallons of cooling tower effluent to a **storm drain**. Review of Figure 13 suggests that this is the storm drain in question; it emerges at FD-779-1. Figure 43 of the TM reports 25 ug/l gross alpha and 12 ug/l gross beta in September, 1989. Analysis of the cooling tower water at the time of the spill was 50 mg/l chromium and 3,000 dpm/l alpha activity. This an example of how the TM is improperly focusing on buildings and foundation drains rather than investigation of the IHSSs.

**Building 850:**

(No Impact upon OU-8 IHSSs.)

**Building 865:**

(No Impact upon OU-8 IHSSs.)

**Building 886:**

Reference Figure 15. (No Impact upon OU-8 IHSSs.)

**Building 881:**

Reference Figure 16. (No Impact upon OU-8 IHSSs.)

**Building 883:**

(No Impact upon OU-8 IHSSs.)

**Building 998/991:**

The foundation drain may have value to the investigation of IHSS 173 and 184 pending determination of the location and discharge point for the drain. The Division disagrees with DOE's conclusion that no further sampling is needed if the foundation drain is connected to the sewage treatment plant. Steam cleaning of parts containing radionuclides at IHSS 184 is discussed in the OU-8 RFI/RI Work Plan. The reference to Figure 18 should be to Figure 19 as presently shown. It appears Figure 18 and 19 were switched.

**Building 910:**

Reference Figure 18 (No Impact upon OU-8 IHSSs.)

**Building 995:**

Reference Figure 20. (No Impact upon OU-8 IHSSs.)

**Building 996/997/999:**

Reference Figure 18. (No Impact upon OU-8 IHSSs.)